To: Henning, Alan[Henning.Alan@epa.gov]; BRANNAN Kevin[BRANNAN.Kevin@deq.state.or.us]; Powers, David[Powers.David@epa.gov]; FOSTER Eugene P[FOSTER.Eugene@deq.state.or.us]; Rueda, Helen[Rueda.Helen@epa.gov]; Wu, Jennifer[Wu.Jennifer@epa.gov]; LOBOY Zach[LOBOY.Zach@deq.state.or.us]; MICHIE Ryan[Michie.Ryan@deq.state.or.us]; Peter Harkema[pharkema@pdx.edu]; SEEDS Joshua[SEEDS.Joshua@deq.state.or.us]; TARNOW Karen E[TARNOW.Karen@deq.state.or.us]; Turner Odell[todell@pdx.edu]; WALTZ David[Waltz.David@deq.state.or.us]
Cc: ABRAHAM KYLE[KYLE.ABRAHAM@state.or.us]; GROOM Jeremy[jeremy.groom@state.or.us]; ALLEN Marganne[marganne.allen@state.or.us]
From: WALTZ David
Sent: Fri 2/1/2013 9:14:54 PM
Subject: FW: Publication addressing conflict with buffers, forest, stream productivity
Linkage.pdf
greene1950.pdf

All,

I am forwarding information sent by Mike Newton to Benton Co, which he asked Adam to forward to me…presumably to inform the MidCoast TMDLs temperature approach.

The context is (at least in part) that Dr. Newton has been providing input on Benton Co's proposed Riparian management approaches (regulatory ordinance vs. non-regulatory) being developed to meet thermal load allocations under the Willamette TMDLs. In this email, he appears to be extending that input to all riparian management, including the RipStream study, using some familiar examples and general concepts that may or may not be widely agreed-upon, depending on one's perspective.

He hasn't requested a response at this time, but I'll touch base with him in the near future.

Regards,

R. David Waltz

TMDL Basin Coordinator

Oregon Dept. of Environmental Quality

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Eugene, OR 97401

Phone:541-687-7345

From: Newton, Michael [mailto:mike.newton@oregonstate.edu]
Sent: Friday, February 01, 2013 11:22 AM
To: WALTZ David
Subject: FW: Publication addressing conflict with buffers, forest, stream productivity

From: Newton, Michael
Sent: Friday, February 01, 2013 11:15 AM
To: STEBBINS Adam (Adam.Stebbins@CO.Benton.OR.US)
Cc: 'david'; FM Stout (fmstout@peak.org); mikenewton@peak.org
Subject: Publication addressing conflict with buffers, forest, stream productivity

Hi, Adam,

The attached paper about the linkage between buffers and stream as well as forest regeneration (ignore the attached irrelevant paper) addresses some fundamental paradoxes about buffer management and ability to manage both fishery and forest.

There are several issues about buffers and riparian management rules. First is the question about purpose of rules. Second, are there conflicts between enforcement of buffer rules in achieving enhancement of various fisheries, third, if buffers are mandated, are they capable of maintaining fish wherever the buffers are required, and fourth, are buffer designs consistent with multiple-resource management and protection. These are all-important in public acceptance of the rule-making process.

1. My sense is that the purpose of buffer rules is to protect a temperature criterion. ODF responds to DEQ's criterion by establishing buffer width rules. Benton County is seeking some public acceptance of management on a voluntary basis to meet DEQ criteria. The ultimate purpose of protecting the fishery appears to be distant from some

realities related to the importance of climate and characteristics of streams in adapting to the criterion. This is a problem, whether it be addressed in terms of voluntary limits on land use or meeting the DEQ criterion through mandatory restrictions on land use.

2. The conflicts between enforcement of DEQ criteria and resource protection show up in the attached document. This is just one example of local research that makes clear that stream productivity is reduced by buffers. The paper by Zwieniecki and Newton (1999; Western J. Appl. Forestry) makes clear that a narrow residual shade-strip as a sun screen just on the south side of a stream virtually eliminates increased warming following tree harvest. No further increase in protection is likely by leaving more trees, regardless of findings from the ODF RipStream study. RipStream did not evaluate the fish resource or even consider it. In any case, fisheries are absolutely dependent on food, and for the cold-water fishery, food is provided by sun and primary producers such as algae that feeds insects. The old paper by Greene (attached) and other literature makes clear that sunlight is needed for a productive cold-water fishery even if water gets quite warm, so long as it cools daily.

3. Streams that flow across broad plains, e.g. Marys River, entail residence time of water in a warm environment in which the cold water standard cannot be met, regardless of buffer arrangement or management. The cold water fishery is maintained in headwater areas. The data in your possession makes very clear that the water in Marys R. remains warm, day and night, and fluctuates in the range of 20-24°C during periods of warm weather. No buffer rule can change this. If a buffer rule were to be imposed, voluntarily or by rule, it would not likely have an effect on temperature or productivity that would make this river into a cold-water fishery. And none of the proposed treatments of streamside vegetation that I have seen would lead to stream temperatures that would cool the Willamette.

4. Streamside vegetation in the Willamette Valley is of little significance to forestry; bank stabilization is its primary function, and enough woody cover in the Valley to stabilize banks is worthwhile in parts of the Marys system. One cannot extend this to areas upstream from the Valley. Where forest management is a significant value, the model that predicts persistence of heat in streams warmed by timber harvest is not applicable. Water adapts to the environment through which it passes. Forested streams will increase in productivity with a sun-side screen that prevents warming, and where there is inadequate shade from lack of trees, water will return to whatever temperature is controlled by the level of cover and air temperature wherever it travels downstream. The same forces that warm water also cool it as water equilibrates with local conditions. Ignoring this limits options available to land managers, especially in forest areas.

I am sharing this information with others, and hope all involved with voluntary or regulatory initiatives for our streams will understand that broad resource issues are critical to viability of narrowly-based rules. Fish are only one of the resources, and recognition of where they are prominent vs secondary resources is critical to community

support. I think we have discussed this before, and I hope this helps inform those who may be involved in streamside issues.

Mike